

**ABSTRACT**

An optical network terminal (ONT) management control protocol of gigabit-capable passive optical network. A gigabit-capable passive optical network encapsulation method (GEM) frame structure that supports delivery of ONT management control information for an optical network unit (ONU) using a GEM and a method for processing data using the GEM frame structure. The GEM frame structure includes in the GEM header a payload type of the GEM header frame, and is used for a gigabit-capable passive optical network (GPON), wherein payload type information, which represents a data type of a payload portion of the GEM frame, is displayed in a header of the GEM frame, in order to provide a GEM control frame which delivers management control information transferred from an OLT (Optical Line Termination).